

THE MINERAL INDUSTRY OF COLOMBIA

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Colombia was the fourth largest country in Latin America and the Caribbean, and in terms of purchasing power parity, it had the fourth largest economy in the region after Brazil, Argentina, and Chile. Colombia's gross domestic product was \$77.6¹ billion at current prices and \$282 billion in purchasing power parity. The country's economy grew by 3.7% after modest increases of 1.6% (revised) and 1.4% (revised) in 2002 and 2001, respectively (International Monetary Fund, 2004²). This economic growth was propelled, in part, by a significant growth in the mining and quarrying (which includes hydrocarbons) and construction sectors, which increased in real terms by 12.4% and 11.7%, respectively. The large contributors to the increase in the mining and quarrying sector were metallic minerals and coal with increases of 73% and 33%, respectively (Departamento Administrativo Nacional de Estadística, 2004a§-c§).

Colombia's mineral production was dominated by the fuel sector. The country was the fifth leading producer of crude petroleum in Latin America and contributed about 6% of the regional output (Organization of the Petroleum Exporting Countries, 2004, p. 54). Colombia was also the leading producer of coal in the region. Historically, Colombia has been recognized as an important producer and the world's leading exporter of emeralds. In addition, Colombia was an important producer of ferronickel and the only producer of platinum in Latin America. Colombia also produced copper, iron ore, lead, steel, silver, and zinc. Colombia was an important producer of cement in Latin America and produced small amounts of construction materials and industrial minerals (table 1).

Government Policies and Programs

Colombia's mining law in force was Ley 685, which came into effect in 2001. Under this law, the Federal mining authority was the Ministerio de Minas y Energía (MME). In 2003, the Government of Colombia continued to reorganize entities that reported directly to MME and those that are associated with it. In June, Presidential Decree 1760 removed the responsibility of administering Colombia's hydrocarbon reserves from the Empresa Colombiana de Petróleos S.A. (Ecopetrol). Ecopetrol, which has been in existence since 1951, had become the Government administrator, producer, and regulator of the industry, which, in addition to producing individually, was producing in association contracts with the private sector. Decree 1760 also created the Agencia Nacional de Hidrocarburos (ANH) as the new entity responsible for administering Colombia's reserves. Within this authority, the new agency became responsible for assigning hydrocarbons areas for exploration and production; evaluating the hydrocarbon potential of the country; designing, promoting, negotiating, and administering new exploration and production contracts; and collecting royalties on behalf of the Government. The decree also created the Sociedad Promotora de Energía de Colombia S.A., which had as its main objective participation and investment in energy-related companies. With the creation of the two organizations, Ecopetrol's name was changed to Ecopetrol S.A., and the entity became a public company tied to MME responsible for exploring and producing from areas under contract prior to December 31, 2003, those that had been operated by Ecopetrol directly, and those to be assigned to it by ANH. Ecopetrol also had the responsibility for Colombia's exploration and production in foreign countries, refining and processing of hydrocarbons and their derivatives, the distribution of hydrocarbons, derivatives, and products in and outside of Colombia, transportation, and marketing (Ecopetrol S.A., 2004a§).

In September, the Government of Colombia through the Consejo Nacional de Política Económica y Social, Departamento Nacional de Planeación, published Document 3245, which recommended that Ecopetrol extend its contracts with the private sector that were in effect on or before December 31, 2003, for the economic life of the fields. The purpose of the recommendation was to avoid delays in future production from said contract areas and to encourage continued investment in exploration in areas in production and maximize the management of these areas (Ministerio de Minas y Energía, 2004, p. 57).

In January 2004, the Government approved several decrees to restructure the Government mineral-producing company Minercol Ltda. (in liquidation), the Instituto Colombiano de Geología y Minería (Ingeominas), and the Unidad de Planeación Minero Energética (UPME). With the new structure, Ingeominas retained the responsibilities of the national geological survey and acquired the responsibilities of Minercol—contracts, titles, and taxation. Carbones de Colombia S.A. (Carbocol) and IFI-Concesión de Salinas (IFI) were in liquidation (Ministerio de Minas y Energía, 2004, p. 105, 115).

Environmental Issues

In 2003, law 216 created the Ministerio de Ambiente, Vivienda and Desarrollo Territorial. This new ministry replaced the Ministerio del Medioambiente, which had been created in 1993 by law 99, as the highest Government authority with responsibility for environmental matters. The Corporaciones Autónomas are responsible for administering natural resources and controlling environmental deterioration associated with extracting activities, such as mining.

¹Where necessary, values have been converted from Colombian Pesos (CP) to U.S. dollars (\$) at the rate of 2,875.92 CP=US\$1.00.

²References that include a section mark (§) are found in the Internet Reference Cited section.

Production

In terms of value (after petroleum) coal, emeralds, gold, and platinum were the principal minerals produced in Colombia. In 2003, production of coal, emeralds, gold, nickel, platinum, and silver increased when compared with those of 2002. Colombia was the leading producer of coal in Latin America with 60% of the region's output. It was the second leading producer of gold (after Peru); it produced 11% of the regional total, but less than 2% of the world total. The country was also the second leading producer of mine nickel (after Cuba) with 29% of Latin America's total and the third leading producer of cement (after Brazil and Mexico).

Trade

Colombia's total exports were estimated to be \$13.09 billion. Petroleum exports totaled \$3.38 billion and represented about 26% of total exports. Total imports were \$13.02 billion. Despite Colombia being a net exporter of petroleum, it imported \$233 million in petroleum products. The United States was Colombia's main trading partner with 44% of Colombia's exports and 29% of its imports. Other important partners were countries from the Latin American Integration Association, the Andean Community Countries, and the European Union (Departamento Administrativo Nacional de Estadística, 2004c\$).

Mineral exports (excluding petroleum) totaled \$2.8 billion or 21% of total exports. Coal (including coke) was the largest export item with \$1.42 billion, which was a 43.7% increase from the revised figure of 2002. The main areas of export for Colombian coal were Europe (43%) and North America (32%). Exports of ferronickel totaled \$294.8 million. This was an increase of 2.4% from that of 2002. Official exports of emeralds decreased by 13.1%. The value of gold exports increased by more than six times the level achieved in 2002 (Ministerio de Minas y Energía, 2004, p. 108).

Colombia exported about 40 crude minerals and more than 10 processed minerals. In 2003, exports of platinum totaled \$17.42 billion. Platinum was exported to France and the United States. The value of exports of limestone was \$4.7 million (Ministerio de Minas y Energía, 2004, p. 109).

Industry Structure

The MME was the Government entity entrusted with the oversight for the minerals and energy sectors. Several agencies either reported directly to it or were associated with it. Some of these were the Dirección de Energía, the Dirección de Gas, the Dirección de Hidrocarburos, the Dirección de Minas, Empresa Comobiana de Gas, Ecopetrol, Ingeominas, and the Unidad de Planeación Minero Energética.

The production of minerals and energy was by the public and private sector. Nickel and coal were produced in their entirety by the private sector. Natural gas and petroleum were produced by the Government through Ecopetrol and in partnership with the private companies with direct contracts between Ecopetrol and the companies. By law, Ecopetrol must have a minimum of 30% in joint ventures with the private sector. Ecopetrol owned and operated the country's petroleum refinery production. After the reorganization of the ministry, Ecopetrol became a publicly owned company stripped of all administrative and regulatory functions. Minercol, Carbocol, and IFI were in liquidation (Ministerio de Minas y Energía, 2004, p. 102, 115).

Commodity Review

Metals

Gold.—Official gold production in 2003 more than doubled from that of 2002 to 46,515 kilograms; this was a historical high (table 1). This increase was stimulated, in part, by the increase in gold price. The largest production increases were from the Antioquia and the Bolivar Departments; production in these two Departments more than tripled. Antioquia remained the leading producing department with 53% of Colombia's gold production. The areas of Remedios and Segovia were estimated to produce from 70% to 80% of the total gold produced in the Antioquia Department. Together, the Antioquia, the Bolivar, and the Cordoba Departments produced 85% of the total (Ministerio de Minas y Energía, 2004, p. 322; Cock and López, 2001\$).

Most of Colombia's gold production was from small- and medium-sized alluvial operations, which used artisanal methods for extraction by the informal mining sector. Colombia's largest alluvial operation was El Bagre in the Rio Nechi, which was owned by the domestic producer Mineros de Antioquia S.A. Mineros de Antioquia also produced in the Marmanto and the Zaragoza districts. In Antioquia, another domestic producer (Frontino Gold Mines Ltd.) produced gold from two vein-type mines (El Silencio in the Segovia district and Providencia in the Remedios district). El Silencio Mine has been the leading gold producer in Colombia's mining history. The quartz-pyrite mine has minor quantities of sphalerite and galena and sometimes calcite. Scheelite and pyhrotite have been found, and gold and silver occur free or in sulfides (Instituto de Investigación Geocientífica Minero-Ambiental y Nuclear, 1999, p. 84-85).

In June, Frontino Gold transferred the abandoned Castillo Mine to the subsistence miners who had been operating in areas of El Silencio Mine. The Government came to an agreement with Frontino Gold after determining that the area where the subsistence miners had been working was unsafe. This effort was part of a project managed by Minercol (now in liquidation) to benefit subsistence miners in the areas of Remedios and Segovia (Red Latinoamericana sobre Industrias Extractivas y Desarrollo Sostenible, 2003\$).

Iron and Steel.—Colombia was Latin America's seventh leading producer of steel with an output of 668,000 metric tons (t) during 2003 (table 1). The only integrated steel producer in Colombia was Acerías Paz del Río, S.A., which had a capacity of about 400,000 metric tons per year (t/yr), but has been producing at levels of less than 300,000 t/yr. The company was under financial restructure because of high debt. In early 2003, the Government and the employees were trying to reach an agreement to save the company from liquidation. In July, the company and the employees signed an agreement. Under the agreement, the employees and retirees increased their ownership of the company from 13% to 43%. The Government of Boyaca reduced its interest in the company from 32% to 22%, and the Government's Institute of Industrial Development reduced its share from 14% to 9%. The remaining 26% of the company was owned by the universities and small investors. The employees agreed to give up salary increases and a number of other benefits and to create a capitalization fund. With the savings, they will purchase the company's debt from the Institute of Industrial Development at 25% of its value. With the reduction of the debt to the Institute, the company decreased its total debt to \$27.8 million. The agreement also included plans to increase the company's production capacity and to improve production technology. Initially, production capacity was scheduled to be expanded by 40,000 t (Presidencia de la República, 2003).

Nickel.—Cerro Matoso S.A. was Colombia's only producer of ferronickel. The mine and ferronickel producer was located in Montelibano, Cordoba Department. The company was owned by BHP Billiton plc. In 2003, mine production of nickel from Cerro Matoso was 70,844 t; this was an almost 22% increase from that of 2002 (table 1). The company produced ferronickel with a nickel content of 47,868 t, which was a 9% increase from that of 2002 and a 73% increase from that of 2000. The 2003 production was about 87% of the company's production capacity, which was expanded in early 2001. Cerro Matoso's total reserves as of June 30, 2003, totaled 43.2 million metric tons (Mt) with a grade of 1.93% nickel (BHP Billiton plc, 2003, p. 208).

Industrial Minerals

Cement.—Colombia was Latin America's third leading producer of cement after Brazil and Mexico. Production in 2003 was estimated to have increased by 10% to 7.3 Mt (table 1). Since 1999, production has decreased by an estimated 21%. The leading cement producer in Colombia was Sindicato Antioqueño with about 50% of Colombia's market share through Cementos del Caribe S.A. and Cementos del Valle S.A. A subsidiary of CEMEX S.A. de C.V., which was one of the world's largest cement companies, was Colombia's second leading producer. CEMEX owned more than 98% of CEMEX Colombia, S.A., which had five cement plants and a capacity of 4.8 million metric tons per year (Mt/yr). In 2003, Colombia's share of CEMEX's worldwide sales of cement and concrete was 3%. Housing represented 40% of CEMEX's cement demand in Colombia (CEMEX S.A. de C.V., 2004, p. 21, 26, 42).

Gemstones (Emerald).—Official production of emerald, which was based on export data, increased by 66% after declining in 2001 and 2002 (Ministerio de Minas y Energía, 2004, p. 321). According to Government estimates, 10% of the emeralds were sold in the country, and 90% were destined for export. Emerald deposits in Colombia are located in the central region of the country in the sedimentary basin of the Cordillera Oriental. Production was from the Boyaca and the Cundinamarca Departments in the Cinturon Esmeraldífero Oriental (Eastern Emerald Belt) and the Cinturon Esmeraldífero Occidental (Western Emerald Belt) regions with a combined area of 730,000 hectares. More than 60 production licenses awarded by the Government were active (Empresa Nacional Minera Ltda., undated§).

Salt.—Production of salt in 2003 was 447,265 t, of which 247,901 t was marine salt (table 1). This was a 15.2% decrease from that of 2002. Most of the decrease was from the production of marine salt, which decreased by 26%. Salt production was from three rock salt mines and two marine salt operations. Since 1970, four of the five operations were managed by IFI, but because of the new mining law of 2001, these operations (Galerazamba in the Bolivar Department, Nemocon and Zipaquira in the Cundinamarca Department, and Upin in the Meta Department) were to be offered as concessions to the private sector. The bids offered in October 2002 were closed and had not been reopened by yearend 2003.

The fifth producer, the Manaure marine salt operation, which is located in La Guajira Department and was the largest producer, was to be transferred from IFI to the Mayuu indigenous community. In recent years, Manaure has been producing about 60% of Colombia's salt total (Unidad de Planeación Minero Energética, 2003; IFI-Concesión de Salinas, 2004; Organización Nacional Indígena de Colombia, 2003§).

Mineral Fuels

Coal.—Colombia, which was the leading producer of coal in Latin America, produced 49.3 Mt; this was an increase of 25% compared with that of 2002 (table 1). The leading producing company was Carbones del Cerrejón LLC in La Guajira Department. Carbones del Cerrejón produced almost 22 Mt during the year. The second leading producer was Drummond Ltd. from its property in La Loma, Cesar Department, with 16.4 Mt. The Cesar and La Guajira Departments produced more than 85% of Colombia's total coal production. Most of Colombia's output was thermal coal. Only a small amount (about 1 Mt) was metallurgical. Most of Colombia's coal production was for export. Domestic consumption was about 3.9 Mt. Of the total, 70% of the consumption was by the industrial sector; 27%, by the power sector; and the remainder, by the residential sector (Ministerio de Minas y Energía, 2004, p. 324, 326).

In 2003, Carbones del Caribe S.A. planned to expand the capacity of its La Jagua coal mine in the Cesar Department to 4.5 Mt and to build a new port facility for export in Rio Cordoba. The mine, which produced 2.3 Mt in 2003 from two open pits and an underground longwall operation, exported more than 60% (1.5 Mt) of its production for the year. Expansion of the mine would be for another open pit. The capacity of the new port was planned to handle 8 Mt, which would allow for exports by small third-party producers. Total cost of the project was estimated to be \$55 million. The company was seeking a \$5 million loan from the

International Financing Corporation, which approved the loan in August (Ministerio de Minas y Energía, 2004, p. 324, 326; International Financing Corporation, 2003§; Sustainable Energy & Development Economy Network, 2004§).

Natural Gas.—By yearend 2003, Colombia's proven natural gas reserves decreased by 7% from those of 2002 to 189 billion cubic meters (reported as 6,689.7 billion cubic feet). Of these reserves, 60% was classified as marketable and 40% was classified as nonmarketable and for internal consumption; 98% of marketable reserves was in the hands of associations and 3% was in Ecopetrol's direct production operations. Of total reserves, 40% was in the hands of Ecopetrol (Ministerio de Minas y Energía, 2004, p. 376; Ecopetrol S.A., 2004b§).

The leading producer of natural gas in Colombia was the subsidiary of ChevronTexaco Corp., ChevronTexaco Colombia (formerly Texas Petroleum Company), in association with Ecopetrol in La Guajira Department. This association produced natural gas from two platforms in the Chuchupa offshore field and from the Ballena onshore field; it produced 80% of Colombia's natural gas production (ChevronTexaco Corp., 2004§).

In December 2003, ChevronTexaco Colombia and Ecopetrol signed an agreement to extend the association contract for the commercial life of the fields. The agreement was approved by the newly formed NAH. Ecopetrol estimated that the investment of \$175 million in the Guajira area would increase access to an additional 28 billion cubic meters of gas (reported as 1,000 gigafeet). With the extension of the contract, ChevronTexaco's participation increased to 57% from 50%; the royalties remained at 20% (ChevronTexaco Corp. 2004§; Ecopetrol S.A., 2003§).

Petroleum.—At yearend 2003, Colombia's petroleum reserves totaled 1.5 billion barrels. This was a 5.4% decrease compared with that of 2002 (Ministerio de Minas y Energía, 2004, p. 61, 283; Ecopetrol S.A, 2004c§). Production during the year totaled 198 million barrels, which was a 6.4% decrease from that of 2002. At this production rate, crude petroleum reserves would be depleted in about 7.8 years. Because hydrocarbons was Colombia's leading economic subsector, for years the Government has focused its efforts in increasing foreign investment in exploration and production of crude petroleum and its associated natural gas and the production and productivity of the refineries. The country results, however, have been limited because issues of security of infrastructure and production facilities.

Ecopetrol produced almost 21% of Colombia's crude production in 2003. BP plc. and Occidental Petroleum Corp. were the two largest private producers in Colombia that worked in association with Ecopetrol with 50% and 23% of total association production, respectively. BP Exploration Company (Colombia) Limited (a subsidiary of BP) was the operator of the Cupiagua and the Cusiana oilfields. The company produced about 38% of the country's crude petroleum output (BP p.l.c., 2004§). Occidental was the operator of the Cano Limon oilfield. In 2003, Occidental produced almost 18% of the country's total crude output (Ecopetrol S.A, 2004b§).

Refinery Products.—Despite being a net exporter of crude petroleum, Colombia was an importer of refinery products (mainly gasoline). In 2003, the country operated four refineries with a production capacity of 128.6 billion barrels per year. Capacity utilization for the year was 82%. In terms of output, the largest of the refineries was Barrancabermeja in the Santander Department, which processed almost 74% of Colombia's crude petroleum during the year. With about 25% of Colombia's refining capacity, the Cartagena refinery in the Bolivar Department was the second largest refinery. The other two refineries, Apiay and Orito, produced about 1%. Colombia's refining system was owned and operated by the Government though Ecopetrol (Ecopetrol S.A., 2004a§).

Infrastructure

Colombia had 110,000 kilometers (km) of highways, of which 26,000 km was paved. The country's 10 major ports and harbors were Bahia de Portete, Barranquilla, Buenaventura, Cartagena, Leticia, Puerto Bolivar, San Andres, Santa Marta, Tumaco, and Turbo. The country's railway system covered 3,304 km. Coal production from the largest coal producers was transported by railway. The Cerrejon Norte line was used by Carbones del Cerrejón. Drummond used a portion of the Atlantic Richfield Co. line for its transportation of coal. The smaller coal producers transported their coal by trucks and barges.

Colombia had five petroleum pipelines that covered a total of 3,585 km. The 805-km Ocesa, the 788-km Cano Limon, the Alto Magdalena, and the Colombia connected production fields to Covenas. TransAndino transported petroleum from Colombia's Orito field to Tumaco in the Pacific. For years, petroleum pipelines have been the targets of terrorist attacks. Natural gas, natural gas liquids, and petroleum products were also transported by pipelines.

In recent years, the Government has been planning infrastructure improvements. Slow economic growth, however, has curbed the progress of these plans.

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TABLE 1
COLOMBIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

| Commodity | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| METALS | | | | | |
| Copper, mine output, Cu content | 2,295 | 2,065 | 2,192 | 1,853 | 1,578 |
| Gold kilograms | 34,599 | 37,018 | 21,813 | 20,823 ^r | 46,515 |
| Iron and steel: | | | | | |
| Iron ore and concentrate | 576,414 ^r | 660,109 ^r | 636,837 ^r | 688,106 ^r | 625,002 |
| Pig iron | 264,362 ^r | 272,254 ^r | 318,953 ^r | 311,459 ^r | 283,333 |
| Steel, crude | 534,038 ^r | 659,882 ^r | 638,259 ^r | 663,724 ^r | 668,410 |
| Semimanufactures, hot-rolled ^c | 650,000 ^r | 650,000 ^r | 552,000 ³ | 575,000 ^e | 550,000 ^e |
| Lead: | | | | | |
| Mine output, Pb content | 166 | 226 | 220 ^e | 220 ^e | 220 |
| Refined (secondary) ^c | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Nickel: | | | | | |
| Mine output, Ni content | 39,274 | 58,927 | 52,962 | 58,196 | 70,844 |
| Ferronickel, Ni content | 28,260 ^r | 27,730 ^r | 38,438 ^r | 43,987 | 47,868 |
| Platinum kilograms | 488 | 339 | 674 | 661 | 1,393 |
| Silver do. | 7,593 | 7,970 | 7,242 | 6,986 | 9,511 |
| Zinc, mine output, Zn content | 27 | 42 | 40 ^e | 40 ^e | 40 |
| INDUSTRIAL MINERALS | | | | | |
| Asbestos, mine output ^c | 61,125 ^r | 59,249 ^r | 96,140 ^r | 62,785 ^r | 60,000 ^e |
| Barite ^c | 600 | 600 | 600 | 600 | 600 |
| Cement, hydraulic thousand tons | 9,200 ^e | 9,750 ^e | 6,830 | 6,604 | 7,300 ^e |
| Clays: | | | | | |
| Bentonite ^c | 8,500 | 8,500 | 8,500 | 8,500 | 8,500 |
| Common clay and kaolin ^c thousand tons | 8,000 | 8,400 | 8,400 | 8,400 | 8,400 |
| Diatomite ^c | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Feldspar ^c | 55,000 | 55,000 | 55,000 | 55,000 | 55,000 |
| Fluorite ^c | 800 | 800 | 800 | 800 | 800 |
| Gemstones, emerald ⁴ thousand carats | 6,800 ^e | 8,454 | 5,499 | 5,390 | 8,963 |
| Gypsum ^c | 560,000 | 560,000 | 560,000 | 560,000 | 560,000 |
| Lime, hydrated and quicklime thousand tons | 13,000 ^e | 13,000 ^e | 11,472 | 10,624 | 11,000 ^e |
| Magnesite ^c | 10,500 | 10,500 | 10,500 | 10,500 | 10,500 |
| Mica ^c | 55 | 55 | 55 | 55 | 55 |
| Nitrogen, N content of ammonia | 75,400 | 92,900 | 95,200 | 110,900 ^r | 111,000 |
| Phosphate rock | 43,148 | 42,615 | 43,000 ^e | 43,000 ^e | 43,000 ^e |
| Salt: | | | | | |
| Rock | 156,933 | 177,690 | 110,212 | 191,554 | 199,364 |
| Marine | 304,433 | 282,188 | 285,073 | 335,783 | 247,901 |
| Total | 461,366 | 459,878 | 395,285 | 527,337 | 447,265 |
| Sodium compounds, n.e.s., sodium carbonate ^c | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Stone and sand: ^c | | | | | |
| Calcite | 6,500 | 6,500 | 6,500 | 6,500 | 6,500 |
| Dolomite thousand tons | 45 | 45 | 45 | 45 | 45 |
| Limestone do. | 10,933 | 11,987 | 11,475 | 14,865 ^r | 16,389 |
| Marble ^c | 190,000 | 190,000 | 190,000 | 190,000 | 190,000 |
| Sand, excluding metal-bearing | 925,000 | 925,000 | 925,000 | 925,000 | 925,000 |
| Sulfur: | | | | | |
| Native (from ore) | -- ^r | 16,057 ^r | 13,120 ^r | 12,035 ^r | 11,714 |
| Byproduct, from petroleum ^c | 16,000 | 16,000 | 15,465 | 15,500 ^e | 15,500 ^e |
| Total ^c | 16,000 ^r | 32,057 ^r | 28,585 ^r | 27,535 ^r | 27,214 |
| Talc, soapstone, pyrophyllite ^c | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| MINERAL FUELS AND RELATED MATERIALS | | | | | |
| Carbon black ^c | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| Coal thousand tons | 32,754 | 38,142 | 43,441 | 39,532 | 49,318 |
| Coke, all types ^c do. | 615 | 615 | 615 | 615 | 615 |

See footnotes at end of table.

TABLE 1--Continued
COLOMBIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

| Commodity | 1999 | 2000 | 2001 | 2002 | 2003 |
|--|---------------------|--------------------|--------------------|--------------------|--------------------|
| MINERAL FUELS AND RELATED MATERIALS--Continued | | | | | |
| Gas, natural: | | | | | |
| Gross million cubic meters | 30,064 ^r | 34,023 | 35,850 | 33,789 | 36,417 |
| Marketed do. | 5,237 ^r | 5,982 | 6,207 | 6,234 | 5,975 |
| Natural gas liquids ^e thousand 42-gallon barrels | 2,600 | 2,600 | 2,600 | 2,600 ^e | 2,600 ^e |
| Petroleum: | | | | | |
| Crude thousand 42-gallon barrels | 297,840 | 250,755 | 220,460 | 211,007 | 197,586 |
| Refinery products: | | | | | |
| Liquefied petroleum gas do. | 7,840 | 8,177 | 8,503 | 8,089 | 8,797 |
| Gasoline: | | | | | |
| Aviation do. | 183 | 147 | 142 | 69 | 315 |
| Motor do. | 40,605 | 41,636 | 43,259 | 39,775 | 40,250 |
| Jet fuel do. | 7,097 | 8,263 ^r | 9,032 | 9,032 | 9,770 |
| Kerosene do. | 1,060 | 213 | 162 | 151 | 1,093 |
| Medium distillate fuel oil do. | 21,209 | 22,604 | 24,220 | 23,678 | 23,912 |
| Lubricants do. | 402 | 383 | 397 ^e | 398 ^e | 400 ^e |
| Residual fuel oil (black oil) do. | 20,797 | 19,408 | 20,639 | 20,767 | 19,413 |
| Asphalt do. | 876 ^r | 1,242 ^r | 1,000 ^e | 1,000 ^e | 1,000 ^e |
| Refinery fuel and losses and unspecified products ^e do. | 3,624 | 4,087 | 3,190 | 2,620 | 549 |
| Total do. | 103,693 | 106,160 | 110,544 | 105,579 | 105,499 |

^e Estimated. ^r Revised.

¹ Includes data available through November 15, 2004.

² Estimated data are rounded to no more than three significant digits; may not add to the totals shown.

³ Reported figure.

⁴ Based on registered exports by the Banco de la República.

TABLE 2
COLOMBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

| Commodity | | Major operating companies and major equity owners | Location of main facilities | Annual capacity |
|------------------------|----------------------------|--|---|--------------------|
| Carbon black | | Cabot Colombiana, S.A. (private, 100%) | Cartagena, Bolivar Department (plant) | NA. |
| Do. | | Productos Petroquímicos, S.A. (private, 100%) | Cali, Valle del Cauca Department (two plants) | 12. |
| Cement | | Cía. Colombia de Clinker, S.A. (Colclinker) (private, 100%) | Cartagena, Bolivar Department (plant) | 1,100. |
| Do. | | Cementos Boyacá, S.A. (Holcim Group, 100%) | Nobsa, Boyaca Department | 1,700. |
| Do. | | CEMEX Colombia S.A. (CEMEX S.A. de C.V., 98.2%) | Five plants | 4,800. |
| Do. | | Cementos del Caribe, S.A. (private, 100%) | Barranquilla, Atlantico Department | 1,000. |
| Do. | | Cementos del Valle, S.A. (private, 100%) | Yumbo, Valle del Cauca Department | 1,200. |
| Do. | | Cementos Río Claro, S.A. (private, 100%) | Puerto Trifuno, Antioquia Department | 1,750. |
| Coal | | Carbones del Cerrejón LLC (Anglo American Plc; 33.3% ; Glencor International AG, 33.3%; and BHP Billiton Plc, 33.3%) | Cerrejon Centro mines, Cerrejon Sur mines, Cerrejon Zona Norte, and Oreganal Mines, La Guajira Department | 22,000. |
| Do. | | Drummond Ltd. (Drummond Co. Inc., 100%) | La Loma Mine (Pribbenow), Cesar Department | 16,000. |
| Do. | | Prodeco S.A. (private, 100%) | Calenturitas in Cesar Department | NA. |
| Do. | | Acerías Paz del Río, S.A. (private, 100%) | Paz del Río, Boyaca Department (mine) | 600. |
| Copper | | Minera El Roble, S.A. | El Roble Mine, El Carmen, Choco Department | 3. |
| Gemstones, emerald | | Minerales de Colombia, S.A. (MINERALCO) (Government, 100%) | Chivor, Coscuez, Muzo, and Quipama Mines, Boyaca Department | NA. |
| Gold | kilograms | Frontino Gold Mines Ltd. (private, 100%) | El Silencio Mine, Segovia District and Providencia Mine, Remedios District, Antioquia Department | 1,500. |
| | do. | Grupo de Bullet S.A. | El Limón Oronorte Mine, Segovia, Antioquia Department | 1,000. |
| Do. | do. | Mineros de Antioquia, S.A. (private, 100%) | El Bagre, Río Nechi, Antioquia Department | 2,000. |
| Do. | do. | Small miners (cooperatives and individual prospectors) | do. | NA. |
| Iron ore | | Acerías Paz del Río, S.A. | Paz del Río, Boyaca Department (mine) | 800. |
| Kaolin | | Cerámicas del Valle Ltda., (private, 100%) | Yumbo, Valle del Cauca Department (mine) | NA. |
| Natural gas | million cubic meters | Ecopetrol S.A. (Government, 100%) | North coast, La Guajira Department (national gasfields) | 4,500. |
| Do. | do. | International Petroleum Colombia, Ltd. (International Petroleum Corp., 100%) | Barrancabermeja locale, Antioquia and Santander Departments | 2,200. |
| Nickel | | Cerro Matoso, S.A. [QNI Ltd. 100% (latter owned by BHP Billiton Plc 100%)] | Cerro Matoso Mine, Montelíbano, Cordoba Department | 55 plant. |
| Nitrogen | | Abonos de Colombia (private, 100%) | Cartagena, Bolivar Department (plant) | 100. |
| Do. | | Monómeros Colombo-Venezolanos, S.A. (private, 100%) | Barranquilla, Atlantico Department (plant) | 85. |
| Petroleum ¹ | thousand 42-gallon barrels | Ecopetrol S.A. | 16 fields in various Departments | 70,000. |
| Do. | do. | HOCOL, S.A. | 14 fields in various Departments | 36,500. |
| Petroleum products | do. | Esopetrol S.A. | Barrancabermeja refinery, Norte de Santander Department | 81,400. |
| Do. | do. | do. | Cartegena refinery, Bolivar Department | 28,000. |
| Do. | do. | do. | Tibu, Norte de Santander Department | 1,825. |
| Do. | do. | do. | Orito, Putumayo Department | 875. |
| Phosphate rock | | Fosfatos de Colombia, S.A. (private, 100%) | Neiva, Huila Department | 30. |
| Do. | | Fosfatos Boyacá, S.A. (Government, 100%) | Iza, Boyaca Department | 20. |

See footnotes at end of table.

TABLE 2--Continued
COLOMBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

| Commodity | | Major operating companies and major equity owners | Location of main facilities | Annual capacity |
|------------------------|-----------|---|--|--------------------|
| Platinum | | Small miners (cooperatives and individual prospectors) | Rio San Juan, Choco Department | NA. |
| Salt, marine | | Instituto de Fomento Industrial (IFI) (Government, 100%) | Manaure Salina, La Guajira Department | 700. |
| Salt, rock | | IFI-Concesión de Salinas (Government, 100%) | Zipaquirá, Cundinamarca Department | 500. |
| Silver | kilograms | Frontino Gold Mines Ltd. | El Silencio Mine, Segovia, Antioquia Department | 2,500. |
| Do. | do. | Small miners (individual prospectors and cooperatives) | Rio Nechi, Antioquia Department (mines) | NA. |
| Steel: | | | | |
| Integrated plant | | Acerías Paz del Río, S.A. | Belencito, Boyaca Department | 400. |
| Semi-integrated plants | | Siderúrgica del Caribe (private, 100%) | Cartagena, Bolivar Department | NA. |
| Do. | | Siderúrgica del Boyacá, S.A. (private, 100%) | Santa Fe de Bogota | NA. |
| Do. | | Siderúrgica del Medellín, S.A. (private, 100%) | Medellín, Antioquia Department | NA. |
| Do. | | Siderúrgica del Muna, S.A. (private, 100%) | Chusaca, Federal District | NA. |
| Do. | | Siderúrgica del Pacífico, S.A. (private, 100%) | Cali, Valle del Cauca Department | NA. |
| Sulfur | | Industrias Purace, S.A. (private, 100%) | El Vinagre Mine, Cauca Department | 60. |
| Do. | | Ecopetrol S.A. | Barrancabermeja, Santander Department | 29. |

NA Not available.

¹These two petroleum entries are examples only. Colombia has more than 3,000 producing wells drilled by Government and private companies; these wells have combined capacities that exceed 755,000 barrels per day of oil.